

What is claimed is:

1. A method for protecting at least one keratinous fiber from extrinsic damage or repairing at least one keratinous fiber following extrinsic damage comprising applying to said at least one keratinous fiber a composition comprising at least one compound comprising at least one C₅ to C₇ saccharide unit substituted with at least one amino group; and heating said at least one keratinous fiber; wherein said at least one compound is present in an amount effective to protect said at least one keratinous fiber from said extrinsic damage or to repair said at least one damaged keratinous fiber; and further wherein said composition is applied prior to said heating or during said heating.
2. A method according to claim 1, wherein said composition is applied prior to and during said heating.
3. A method according to claim 1, wherein said at least one amino group is chosen from unsubstituted amino groups and substituted amino groups.
4. A method according to claim 1, wherein said at least one C₅ to C₇ saccharide unit is further substituted with at least one group different from said at least one amino group.
5. A method according to claim 1, wherein said at least one C₅ to C₇ saccharide unit is substituted with said at least one amino group at C1 of said saccharide

unit.

6. A method according to claim 1, wherein said at least one C₅ to C₇ saccharide unit is substituted with said at least one amino group at C2 of said saccharide unit.

7. A method according to claim 1, wherein said at least one compound is chosen from C₅ monosaccharides substituted with at least one amino group, C₆ monosaccharides substituted with at least one amino group, C₇ monosaccharides substituted with at least one amino group, polymers comprising at least one C₅ monosaccharide substituted with at least one amino group, polymers comprising at least one C₆ monosaccharide substituted with at least one amino group, polymers comprising at least one C₇ monosaccharide substituted with at least one amino group, and glycoproteins comprising at least one C₅ to C₇ saccharide unit substituted with at least one amino group.

8. A method according to claim 7, wherein said C₅ monosaccharides substituted with at least one amino group are chosen from pentosamines.

9. A method according to claim 8, wherein said pentosamines are chosen from aldopentosamines and ketopentosamines.

10. A method according to claim 9, wherein said pentosamines are chosen from xylosamine, arabinosamine, lyxosamine, ribosamine, ribulosamine and xylulosamine.

11. A method according to claim 7, wherein said C₆ monosaccharides substituted with at least one amino group are chosen from hexosamines.

12. A method according to claim 11, wherein said hexosamines are chosen from

aldohexosamines and ketohexosamines.

13. A method according to claim 12, wherein hexosamines are chosen from glucosamine, galactosamine, allosamine, altrosamine, mannosamine, gulosamine, idosamine, galactosamine, and talosamine.

14. A method according to claim 7, wherein said C₇ monosaccharides substituted with at least one amino group are chosen from heptosamines.

15. A method according to claim 14, wherein said heptosamines are chosen from aldoheptosamines and ketoheptosamines.

16. A method according to claim 1, wherein said at least one compound is chosen from oligosaccharides derived from said at least one C₅ to C₇ saccharide unit substituted with at least one amino group.

17. A method according to claim 1, wherein said at least one C₅ to C₇ saccharide unit is chosen from furanoses and derivatives thereof.

18. A method according to claim 1, wherein said at least one C₅ to C₇ saccharide unit is chosen from derivatives of C₅ to C₇ saccharide units.

19. A method according to claim 18, wherein said derivatives of C₅ to C₇ saccharide units are chosen from imine derivatives of C₅ to C₇ saccharide units, hemiacetal derivatives of C₅ to C₇ saccharide units, hemiketal derivatives of C₅ to C₇ saccharide units, and oxidized derivatives of C₅ to C₇ saccharide units.

20. A method according to claim 18, wherein said derivatives of C₅ to C₇ saccharide units are further substituted with at least one group different from said at least

one amino group.

21. A method according to claim 1, wherein said at least one compound is chosen from lyxosylamine.

22. A method according to claim 1, wherein said at least one compound is chosen from glucosamine.

23. A method according to claim 1, wherein said at least one compound is chosen from galactosamine.

24. A method according to claim 1, wherein said at least one compound is present in said composition in an amount ranging from 0.01% to 10% by weight relative to the total weight of the composition.

25. A method according to claim 24, wherein said at least one compound is present in said composition in an amount ranging from 0.1% to 5% by weight relative to the total weight of the composition.

26. A method according to claim 1, wherein said composition further comprises at least one additional sugar, said at least one additional sugar being different from said at least one compound comprising at least one C₅ to C₇ saccharide unit substituted with at least one amino group and derivatives thereof.

27. A method according to claim 26, wherein said at least one additional sugar is chosen from monosaccharides, oligosaccharides and polysaccharides.

28. A method according to claim 27, wherein said monosaccharides are chosen from hexoses.

29. A method according to claim 28, wherein said hexoses are chosen from

allose, altrose, glucose, mannose, gulose, idose, galactose, talose, sorbose, psicose, fructose, and tagatose.

30. A method according to claim 26, wherein said at least one additional sugar is present in said composition in an amount ranging from 0.01% to 10% by weight relative to the total weight of the composition.

31. A method according to claim 30, wherein said at least one additional sugar is present in said composition in an amount ranging from 0.1% to 5% by weight relative to the total weight of the composition.

32. A method according to claim 1, wherein said composition is in the form of a liquid, oil, paste, stick, dispersion, emulsion, lotion, gel, or cream.

33. A method according to claim 1, wherein said at least one keratinous fiber is hair.

34. A method according to claim 1, wherein the extrinsic damage is caused by heating, UV radiation, or chemical treatment.

35. A method according to claim 1, wherein said composition protects said at least one keratinous fiber from extrinsic damage and repairs at least one keratinous fiber following extrinsic damage.

36. A method according to claim 1, wherein said composition further comprises at least one suitable additive chosen from anionic surfactants, cationic surfactants, nonionic surfactants, amphoteric surfactants, fragrances, penetrating agents, antioxidants, sequestering agents, opacifying agents, solubilizing agents, emollients, colorants, screening agents, preserving agents, proteins, vitamins, silicones, polymers, plant oils,

mineral oils, and synthetic oils.

37. A composition for protecting at least one keratinous fiber from extrinsic damage or repairing at least one keratinous fiber following extrinsic damage comprising at least one compound comprising at least one C₅ to C₇ saccharide unit substituted with at least one amino group, wherein said at least one compound is present in an amount effective to protect said at least one keratinous fiber from said extrinsic damage or to repair said at least one damaged keratinous fiber.

38. A composition according to claim 37, wherein said composition is heat-activated.

39. A composition according to claim 37, wherein said at least one amino group is chosen from unsubstituted amino groups and substituted amino groups.

40. A composition according to claim 37, wherein said at least one C₅ to C₇ saccharide unit is further substituted with at least one group different from said at least one amino group.

41. A composition according to claim 37, wherein said at least one C₅ to C₇ saccharide unit is substituted with said at least one amino group at C1 of said saccharide unit.

42. A composition according to claim 37, wherein said at least one C₅ to C₇ saccharide unit is substituted with said at least one amino group at C2 of said saccharide unit.

43. A composition according to claim 37, wherein said at least one compound

is chosen from C₅ monosaccharides substituted with at least one amino group, C₆ monosaccharides substituted with at least one amino group, C₇ monosaccharides substituted with at least one amino group, polymers comprising at least one C₅ monosaccharide substituted with at least one amino group, polymers comprising at least one C₆ monosaccharide substituted with at least one amino group, polymers comprising at least one C₇ monosaccharide substituted with at least one amino group, and glycoproteins comprising at least one C₅ to C₇ saccharide unit substituted with at least one amino group.

44. A composition according to claim 43, wherein said C₅ monosaccharides substituted with at least one amino group are chosen from pentosamines.

45. A composition according to claim 44, wherein said pentosamines are chosen from aldopentosamines and ketopentosamines.

46. A composition according to claim 45, wherein said pentosamines are chosen from xylosamine, arabinosamine, lyxosamine, ribosamine, ribulosamine and xylulosamine.

47. A composition according to claim 43, wherein said C₆ monosaccharides substituted with at least one amino group are chosen from hexosamines.

48. A composition according to claim 47, wherein said hexosamines are chosen from aldohexosamines and ketohexosamines.

49. A composition according to claim 48, wherein hexosamines are chosen from glucosamine, galactosamine, allosamine, altrosamine, mannosamine, gulosamine, idosamine, galactosamine, and talosamine.

50. A composition according to claim 43, wherein said C₇ monosaccharides substituted with at least one amino group are chosen from heptosamines.

51. A composition according to claim 50, wherein said heptosamines are chosen from aldoheptosamines and ketoheptosamines.

52. A composition according to claim 37, wherein said at least one compound is chosen from oligosaccharides derived from said at least one C₅ to C₇ saccharide unit substituted with at least one amino group.

53. A composition according to claim 37, wherein said at least one C₅ to C₇ saccharide unit is chosen from furanoses and derivatives thereof.

54. A composition according to claim 37, wherein said at least one C₅ to C₇ saccharide unit is chosen from derivatives of C₅ to C₇ saccharide units.

55. A composition according to claim 54, wherein said derivatives of C₅ to C₇ saccharide units are chosen from imine derivatives of C₅ to C₇ saccharide units, hemiacetal derivatives of C₅ to C₇ saccharide units, hemiketal derivatives of C₅ to C₇ saccharide units, and oxidized derivatives of C₅ to C₇ saccharide units.

56. A composition according to claim 54, wherein said derivatives of C₅ to C₇ saccharide units are further substituted with at least one group different from said at least one amino group.

57. A composition according to claim 37, wherein said at least one compound is chosen from lyxosylamine.

58. A composition according to claim 37, wherein said at least one compound is chosen from glucosamine.

59. A composition according to claim 37, wherein said at least one compound is chosen from galactosamine.

60. A composition according to claim 37, wherein said at least one compound is present in said composition in an amount ranging from 0.01% to 10% by weight relative to the total weight of the composition.

61. A composition according to claim 60, wherein said at least one compound is present in said composition in an amount ranging from 0.1% to 5% by weight relative to the total weight of the composition.

62. A composition according to claim 37, further comprising at least one additional sugar, said at least one additional sugar being different from said at least one compound comprising at least one C₅ to C₇ saccharide unit substituted with at least one amino group and derivatives thereof.

63. A composition according to claim 62, wherein said at least one additional sugar is chosen from monosaccharides, oligosaccharides and polysaccharides.

64. A composition according to claim 63, wherein said monosaccharides are chosen from hexoses.

65. A composition according to claim 64, wherein said hexoses are chosen from allose, altrose, glucose, mannose, gulose, idose, galactose, talose, sorbose, psicose, fructose, and tagatose.

66. A composition according to claim 62, wherein said at least one additional sugar is present in said composition in an amount ranging from 0.01% to 10% by weight relative to the total weight of the composition.

67. A composition according to claim 66, wherein said at least one additional sugar is present in said composition in an amount ranging from 0.1% to 5% by weight relative to the total weight of the composition.

68. A composition according to claim 37, wherein said composition is in the form of a liquid, oil, paste, stick, dispersion, emulsion, lotion, gel, or cream.

69. A composition according to claim 37, wherein said at least one keratinous fiber is hair.

70. A composition according to claim 37, wherein said composition further comprises at least one suitable additive chosen from anionic surfactants, cationic surfactants, nonionic surfactants, amphoteric surfactants, fragrances, penetrating agents, antioxidants, sequestering agents, opacifying agents, solubilizing agents, emollients, colorants, screening agents, preserving agents, proteins, vitamins, silicones, polymers, plant oils, mineral oils, and synthetic oils.

71. A kit for protecting at least one keratinous fiber from extrinsic damage or for repairing at least one keratinous fiber following extrinsic damage comprising at least one compartment,

wherein said at least one compartment comprises a composition comprising at least one compound comprising at least one C₅ to C₇ saccharide unit substituted with at least one amino group, and

wherein said at least one compound is present in said composition in an amount effective to protect said at least one keratinous fiber from said extrinsic damage or to

repair said at least one damaged keratinous fiber.

72. A kit according to claim 71, wherein said composition further comprises at least one additional sugar, said at least one additional sugar being different from said at least one compound comprising at least one C₅ to C₇ saccharide unit substituted with at least one amino group and derivatives thereof.